REMARKS

Summary of the Office Action

Claims 1-16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Potter (US 5,262,030).

Summary of the Response to the Office Action

Applicant has amended the claim 1 to further define the invention. Accordingly, claims 1-16 are pending for consideration.

All Claims Define Allowable Subject Matter

Claims 1-16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Potter (US 5,262,030). Applicant respectfully traverses this rejection as being based upon a reference that neither teaches nor suggests the novel combination of features recited in amended independent claim 1, and hence dependent claims 2-16.

Independent claim 1, as amended, recites a sputtering system for depositing a thin film on a substrate including, in part, "a plurality of electromagnets formed having different geometrical group cell patterns on the fixed plate," wherein "at least two of the geometrical group cell patterns have electromagnets of different geometrical shapes, respectively." In contrast to Applicant's claimed invention, Potter fails to teach or suggest this combination of features for at least the reasons set forth below.

The Office Action alleges that "[f]rom Figures 10, 11 and Figures 12A and 12B the examiner understands that there are at least one and two groups of coils which will trace a hexagonal pattern and a triangular pattern by connecting the coil by imaginary lines and that each of the coils are selectably energizable as discussed above for energizing whichever magnets or groups of magnets are necessary in order to achieve uniform target utilization." In

addition, the Office Action further alleges that "[t]he selective energization allows for the different group cell patterns to be formed." Applicant again respectfully disagrees.

Initially, Applicant respectfully submits that Potter provides no teaching or suggestion whatsoever with respect to at least one and two groups of coils which "will trace a hexagonal pattern and a triangular pattern by connecting the coil by imaginary lines and that each of the coils are selectably energizable," as alleged by the Office Action. In fact, as demonstrated by the "clean" copy of Potter submitted with Applicant's Response filed on May 21, 2004, there are no "imaginary lines" connecting the elements disclosed by Potter, either explicitly or implicitly.

In addition, Applicant respectfully asserts that the Office Action's alleged motivation is simply not found in Potter, either explicitly or implicitly. Although Potter generally discloses (col. 3, lines 43-46) "a cathode with two degrees of freedom has the shape of a large rectangle or square and is approximately the size of the pallets used in existing disk sputtering machines," Applicant respectfully asserts that Potter fails to teach or suggest anything regarding a sputtering system including "at least two geometrical group cell patterns having electromagnets of different geometrical shapes," as recited by amended independent claim 1. Moreover, although Potter further discloses (col. 7, lines 36-40), in part, to "partition the plane 21 into a number of elements, where each element is small relative to the distance to the region where the magnetic field is to be used, and to provide a means for controlling the potential of each element," Applicant respectfully asserts that Potter fails to teach or suggest "at least two geometrical groups cell patterns having electromagnets of different geometrical shapes," as recited by amended independent claim 1, and hence dependent claims 2-16.

Furthermore, although Potter further discloses (col. 7, lines 28-43, and FIGs. 10 and 11) "the plane 21 partitioned into elements 50 having a square shape" and "[a]nother example consisting of circular elements 50 arranged in a hexagonal pattern," Applicant respectfully asserts that Potter fails to teach or suggest "at least two geometrical groups cell patterns having electromagnets of different geometrical shapes," as recited by amended independent claim 1, and hence dependent claims 2-16.

The Office Action's alleged motivation to modify Potter to "allows [for] more uniform erosion over the surface of the target" is inapposite to providing a plurality of electromagnets having different geometrical groups cell patterns. In other words, although Potter may teach arranging elements in one of a square or hexagonal pattern, Potter is completely silent with respect to providing "a plurality of electromagnets formed having different geometrical group cell patterns on the fixed plate," as recited by independent claim 1, and hence dependent claims 2-16.

If the Office Action is taking the position that providing electromagnets having different geometrical groups cell patterns is somehow common knowledge in the art, Applicant again respectfully submits that, as instructed in MPEP 2144.03A, "[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known," and, in part, "[i]t is never appropriate to rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principle evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697."

Moreover, "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of

the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)." See MPEP 2143.01. Thus, Applicant respectfully submits that since Potter fails to teach or suggest providing electromagnets having different geometrical groups cell patterns, then Potter fails to provide motivation with which to arrive at the presently claimed invention.

With regard to the Examiner's comments provided in the "Response to Arguments" section of the Office Action, Applicant respectfully asserts that Potter absolutely does not provide any teaching, suggestion, or motivation for one of ordinary skill in the art to configure the magnets to arrive at Applicant's claimed invention. Moreover, the suggestion in Potter to "selectively" activate magnets does not come close to providing one of ordinary skill in the art with the motivation to form the electromagnets of Potter into "different geometrical group cell patterns," as required by independent claim 1, and hence dependent claims 2-16. In addition, Applicant respectfully asserts that although use of the term "selectively" by Potter, in claim 1, for example, is for "establishing a magnetic field of a predetermined configuration," Potter still fails to teach or suggest, either implicitly or explicitly, forming a plurality of electromagnets having different geometrical group cell patterns.

Thus, for at least the above reasons, Applicant respectfully submits that Potter fails to make obvious Applicant's invention of claims 1-16 under 35 U.S.C. § 103(a), and respectfully requests that the rejection be withdrawn.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicants' undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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